

5. The battery system of claim 1 further comprising a connection module disposed on an exterior of the housing for coupling between the battery system and electronic components.

6. The battery system of claim 5, wherein the connection module monitors the battery during charging and discharging operations.

7. The battery system of claim 1, further comprising a flexible coupling comprising a board-to-board connector at a distal end of the flexible coupling, the flexible coupling extending from the connection terminal to electrically couple the electronic device and the electrode assembly.

8. A battery system comprising:

an electrically conductive housing having a base portion and a lid that cooperate to define a hermetically sealed interior cavity, the base portion including a bottom wall and a sidewall extending upward and away from the bottom wall to form a flange around a periphery of the housing, wherein the lid overlaps with a portion of the sidewall to form the flange and the sidewall contains an opening for selectively hermetically sealing the housing;

an electrode assembly disposed within the interior cavity and including a set of layers comprising one or more anode layers, one or more cathode layers, and a separation layer between each of the anode and cathode layers, wherein the electrode assembly is electronically coupled with the housing to form a common ground; electrolyte disposed within the housing around the electrode assembly;

a connection terminal electrically coupled to the electrode assembly and extending through the opening in the sidewall of the housing; and

an electrically insulative spacer extending circumferentially around the connection terminal to electrically isolate the connection terminal from the housing.

9. The battery system of claim 8 further comprising a connection bar disposed within the cavity and electrically coupled with the connection terminal, the connection bar coupleable with the electrode assembly when the electrode assembly is disposed within the cavity.

10. The battery system of claim 8, wherein the connection terminal monitors a charging of the set of layers, a discharging of the set of layers, or an operational condition of the set of layers.

11. The battery system of claim 8, wherein the lid and the sidewall are welded at the flange to form a hermetic seal.

12. A portable electronic device comprising:

a display;

a processor;

a memory; and

a battery system for providing power to the display, the processor, and the memory, the battery system comprising:
an electrode assembly including an anode, a cathode, and a separator;
a housing defining a hermetically sealed cavity enclosing the electrode assembly; and
a connection module electrically coupling the electrode assembly to the display, the processor, and the memory, a portion of the connection module extending through a sidewall of the housing to electrically couple with the electrode assembly.

13. The portable electronic device of claim 12, wherein the portable electronic device is selected from a group consisting of a smartphone, a wireless mouse, and a watch.

14. The portable electronic device of claim 12, the housing is electrically coupled to the electrode assembly to form a common ground shared by the display, the processor, and the memory.

15. The portable electronic device of claim 12, the connection module comprising a connection bar disposed in the cavity for coupling with the electrode assembly when the electrode assembly is disposed within the cavity.

16. The portable electronic device of claim 12, the housing comprising an edge with a curved portion to form a flange for hermetic sealing of the housing.

17. The portable electronic device of claim 16, further comprising an electronic component with a portion of the electronic component positionable beneath the flange along the edge of the housing.

18. The portable electronic device of claim 12, the housing comprising:

a first area;

sidewalls extending from the first area and forming a cavity for receiving the electrode assembly, the sidewalls having curved edges opposite the first area; and
a second area generally parallel to the first area and connectable with the curved edges of the sidewalls to form a flanged edge for hermetic sealing of the cavity.

19. The portable electronic device of claim 18, wherein the second area and the sidewalls are welded together to withstand an internal pressure increase in the cavity.

20. The portable electronic device of claim 12, the battery system further comprising a terminal extending through the housing and electrically coupling the electrode assembly and the connection module.

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